

## I. IN THE SPECIFICATION

Please amend the specification as shown in the following replacement paragraphs, in accordance with 37 CFR §1.121(b)(ii). Marked up versions of each of the replacement paragraphs are attached to this response, beginning on a separate sheet.

Please replace the paragraph beginning on page 1, line 23 with the following:

A1  
Clindamycin has long been recognized as being particularly effective in the treatment of staphylococcal infections. Several commercial formulations of clindamycin designed for oral administration can be found on the market, including CLEOCIN® HCL (Pharmacia Corporation, NJ, USA), an oral formulation of clindamycin hydrochloride designed for adults, and CLEOCIN® PEDIATRIC (Pharmacia Corp.), an oral formulation of clindamycin palmitate hydrochloride designed for children. In such formulations clindamycin hydrochloride and clindamycin palmitate hydrochloride are hydrolyzed to clindamycin free base in the gastrointestinal tract of a subject, prior to being absorbed into the bloodstream.

Please replace the paragraph beginning on page 2, line 19 with the following:

A2  
Formulations, such as vaginal suppositories or topical creams, that permit one to administer a drug to a subject through the vagina offers several advantages over oral and parenteral means, described above. See, for example, vaginal suppositories of clindamycin disclosed in International Application No. PCT/US00/19533, published as WO 01/10407, incorporated by reference herein. The present application claims priority to the same U.S. provisional application cited therein, through a U.S. counterpart of the International Application, U.S. Patent Application No. 09/619,930. WO 01/10407 does not disclose the administration of any lincosamides other than clindamycin, nor does it suggest that any such composition be rectally administered. Depending upon the composition of the formulation, such formulations enable one to treat bacterial infections in the vagina of a subject alone, and/or to introduce the active agent into the blood stream and into various other parts and systems of the subject. Naturally, vaginal administration is only available to a certain portion of the population of any given subject species.

Please replace the paragraph beginning on page 3, line 1 with the following:

A3  
The rectal route of administration offers several advantages over other means of administration, including the availability of the means of delivery to all members of a species, regardless of gender, throat size, or aversion to needles. Various types of suppositories have been described as being useful for rectal delivery of any one of a number of different active

*B cont.*  
agents into a subject, including lincosamides, such as clindamycin or lincomycin. See, for example, U.S. Patent No. 4,289,757 by E. Myles Glen; EP 0 206 947 by Jose Alexander; WO 99/29299 by Rudolf Linder; and U.S. Patent No. 4,464,466 by Alexander Argoudelis.

Please replace the paragraph beginning on page 3, line 29 with the following:

*A4*  
In one embodiment, the present invention is a suppository composition for rectal administration of a lincosamide antibacterial drug, the composition comprising an antimicrobially effective amount of the lincosamide dispersed in a Hard Fat suppository base, wherein the lincosamide is in the form of solid particles. Suppositories of the present invention can be used to effect systemic delivery of a lincosamide to a subject, by rectal administration.

Please replace the paragraph beginning on page 5, line 9 with the following:

*A5*  
Figure 1 shows an x-ray diffraction pattern of the different polymorphic transitions that a Hard Fat NF suppository base containing clindamycin will go through over time. The peaks at 15-25° 2 $\theta$  represent the peaks associated with the polymorphic transition of the base, wherein A =  $\alpha$ , B =  $\alpha'$ , and C =  $\beta$ .

Please replace the paragraph beginning on page 5, line 12 with the following:

*A6*  
Figure 2 is a flow chart illustrating a method of manufacturing lincosamide rectal suppositories of the present invention.

Please replace the paragraph beginning on page 5, line 24 with the following:

*A7*  
In one embodiment, the composition comprises an antimicrobially effective amount of a lincosamide or a pharmaceutically acceptable salt or ester thereof dispersed in a Hard Fat base. The Hard Fat suppository base used in the compositions of the present invention is preferably a Hard Fat NF grade suppository base. Hard Fat bases, particularly, Hard Fat NF suppository bases, provide an active agent having high stability and efficacy in treating disorders caused by bacteria.

Please replace the paragraph beginning on page 6, line 1 with the following:

*A8*  
As used herein, the term "Hard Fat base" refers to a mixture of glyceride esters of higher saturated fatty acids. The mixture of triglycerides, diglycerides and monoglycerides making up a Hard Fat may be obtained either by esterification of fatty acids of natural origin

Q8 cont  
with glycerol or by transesterification of natural fats. Each type of Hard Fat is characterised by its melting point, its hydroxyl value and its saponification value.

Please replace the paragraph beginning on page 7, line 25 with the following:

Q9  
The uses, properties and methods of synthesis of clindamycin are set forth in U.S. Patent 3,969,516, Stoughton, issued July 13, 1976; U.S. Patent 3,475,407, Bierkenmeyer, issued in 1969; U.S. Patent 3,487,068, issued in 1969; U.S. Patent 3,509,127 and 3,544,551, Kagan and Magerlein, issued in 1970; U.S. Patent 3,513,155, Bierkenmeyer and Kagan, issued in 1970; Morozowich and Sinkula, U.S. Patent 3,580,904 issued in 1971 and 3,655,885 issued in 1972; U.S. Patent 3,714,141, issued in 1973; U.S. Patent 4,568,741 issued in 1986; U.S. Patent 4,710,565, issued in 1984; (all of the foregoing patents being incorporated herein by reference).

Please replace the paragraph beginning on page 8, line 22 with the following:

Q10  
Lincomycin, its characteristics, and methods of synthesis thereof are set forth in many references, including but not limited to, U.S. Patent No. 3,086,912, in U.S. Patent No. 3,676,302 by Jeronimo Visser, incorporated herein by reference. Methods of synthesis of and descriptions of lincomycin derivative antibiotics suitable for use in the compositions of the present invention are set forth in many references, including, but not limited to, U.S. Patent No. 3,329,568 by Alexander Argoudelis, in U.S. Patent No. 3,359,164 by Alexander Argoudelis, in U.S. Patent No. 3,361,739 by Alexander Argoudelis, in U.S. Patent No. 3,395,139 by Donald Mason.

Please replace the paragraph beginning on page 9, line 8 with the following:

Q11  
All three preferred types of lincosamides described above, i.e. clindamycin, lincomycin, and pirlimycin, have been administered to various types of animals, as antibiotics. All three have also been used as growth enhancers for meat producing animals. See, for example studies discussed in WO 88/09130.

Please replace the paragraph beginning on page 9, line 12 with the following:

Q12  
The lincosamide is preferably present as a solid, in particulate form. The size of the particles depends upon the solubility of the particular lincosamide used, with smaller particles needed for less soluble forms of lincosamides. The volume mean diameter of the solid particles of lincosamides are preferably at least about 0.5  $\mu\text{m}$  to about 500  $\mu\text{m}$ , more

Q12  
cont

preferably 0.5  $\mu\text{m}$  to about 300  $\mu\text{m}$ , even more preferably 0.5  $\mu\text{m}$  to about 150  $\mu\text{m}$ , even more preferably about 0.5  $\mu\text{m}$  to about 10  $\mu\text{m}$ . The particles of the lincosamide are preferably dispersed in a pharmaceutically acceptable carrier, in which the lincosamide is poorly soluble, wherein the composition is adapted for rectal administration. The pharmaceutically acceptable carrier preferably comprises a Hard Fat.

Please replace the paragraph beginning on page 11, line 1 with the following:

Q13

The total weight of typical rectal suppositories for human subjects preferably range in size from about 0.5 g to about 10 g, preferably from about 1 g to about 5 g, and most preferably from about 2 g to about 3 g. Human rectal clindamycin suppository compositions would generally be in the range of 0.1% to 60% by weight of clindamycin, preferably 0.5% to 30%, more preferably 1.5% to 10%, and most preferably 1.5% to 7.5% of clindamycin. The percent by weight of lincosamide in the most preferred suppositories of the present invention depends upon the total weight of the suppository and the dose required for systemic treatment of an infection of harmful gram-positive bacteria in subject(s) to be treated therewith.

Please replace the paragraph beginning on page 13, line 27 with the following:

Q14

If the particle size of a bulk sample of a lincosamide is greater than 10  $\mu\text{m}$ , it may be reduced in particle size by any conventional means. However, it is preferably milled using a pulverizing rotary mill or air jet micronizer. With the exception of particle size, the physical and chemical characteristics of the milled drug are preferably the same as the unmilled drug.

Please replace the paragraph beginning on page 14, line 1 with the following:

Q15

A particularly preferred embodiment of the invention is a suppository comprising a lincosamide having a particle size of 10  $\mu\text{m}$  or less dispersed in a Hard Fat NF suppository base. The suppository is solid at room temperature, and has a flow point of 37 °C or less after reaching the  $\beta$  polymorphic form. In the more preferred embodiment, the Hard Fat NF is a mixture of glyceride esters of vegetable  $\text{C}_{12}$ - $\text{C}_{18}$  saturated fatty acids, the majority of which are triglycerides. In the most preferred embodiment, the Hard Fat NF meets the specifications described previously above.

Please replace the paragraph beginning on page 17, line 21 with the following: